Developmental Biology

An International Journal Published under the Auspices of the Society for Developmental Biology

Editor-in-Chief: PETER J. BRYANT

Associate Editors

Eileen D. Adamson
Merton Bernfield
Sanford I. Bernstein
Ira B. Black
Mary Bownes
Igor Dawid
Connie J. Eaves
Richard A. Firtel
Joseph Frankel
Scott E. Fraser
H. Robert Horvitz
Alan F. Horwitz
Laurinda A. Jaffe
Story C. Landis
Carl N. McDaniel
Anne McLaren
Eric Olson
Carl Parker
Bruce M. Paterson
Rudolf A. Raff
Lynn M. Riddiford
Gerald Schatten
Davor Solter
M. Takeichi
Victor D. Vacquier
Fred Wilt
Larry Zipursky

Editorial Assistants
Sharon Clark
Jayne Sutton

VOLUME 155, 1993

ACADEMIC PRESS, INC.

San Diego New York Boston London Sydney Tokyo Toronto

Copyright © 1993 by Academic Press, Inc.

DEVELOPMENTAL BIOLOGY is a registered trademark
of Academic Press, Inc. (Harcourt Brace Jovanovich, Inc.)

All Rights Reserved

No part of this publication may be reproduced or transmitted in any form, or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (27 Congress Street, Salem, Massachusetts 01970), for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1993 articles are as shown on the article title pages; if no fee code appears on the title page, the copy fee is the same as for current articles.

0012-1606/93 $5.00

MADE IN THE UNITED STATES OF AMERICA

This journal is printed on acid-free paper.

Contents of Volume 155

NUMBER 1, JANUARY 1993

Full Papers

JEAN-CLAUDE LOUIS, ELLA MAGAL, PATRICIA BURNHAM, AND SILVIO VARON. Cooperative Effects of Ciliary Neurotrophic Factor and Norepinephrine on Tyrosine Hydroxylase Expression in Cultured Rat Locus Coeruleus Neurons 1

PATRICIA OLDS-CLARKE AND LINDA R. JOHNSON. *t* Haplotypes in the Mouse Compromise Sperm Flagellar Function 14

KRISHANU RAY, VOLKER HARTENSTEIN, AND VERONICA RODRIGUES. Development of the Taste Bristles on the Labellum of *Drosophila melanogaster* 26

CHRISTOPHER TREVINO, ROSALIE ANDERSON, AND KEN MUNEOKA. 3T3 Cell Integration and Differentiative Potential during Limb Development in the Mouse 38

S. L. WOLDA, C. J. MOODY, AND R. T. MOON. Overlapping Expression of *Xwnt*-3A and *Xwnt*-1 in Neural Tissue of *Xenopus laevis* Embryos 46

G. SLUDER, F. J. MILLER, AND K. LEWIS. Centrosome Inheritance in Starfish Zygotes II: Selective Suppression of the Maternal Centrosome during Meiosis 58

PELLEGRINO ROSSI, SUSANNA DOLCI, CRISTINA ALBANESI, PAOLA GRIMALDI, ROSSANA RICCA, AND RAFFAELE GEREMIA. Follicle-Stimulating Hormone Induction of Steel Factor (SLF) mRNA in Mouse Sertoli Cells and Stimulation of DNA Synthesis in Spermatogonia by Soluble SLF 68

JEANNIE CHEN, ROB MAXSON, AND PETER A. JONES. Direct Induction of DNA Hypermethylation in Sea Urchin Embryos by Microinjection of 5-Methyl dCTP Stimulates Early Histone Gene Expression and Leads to Developmental Arrest 75

THOMAS A. BÜHLER, TREVOR C. DALE, CHRISTINA KIEBACK, ROBIN C. HUMPHREYS, AND JEFFREY M. ROSEN. Localization and Quantification of Wnt-2 Gene Expression in Mouse Mammary Development 87

DANIEL D. CARSON, JY-PING TANG, AND JOANNE JULIAN. Heparan Sulfate Proteoglycan (Perlecan) Expression by Mouse Embryos during Acquisition of Attachment Competence 97

GAIL PATSTONE, ELENA B. PASQUALE, AND PAMELA A. MAHER. Different Members of the Fibroblast Growth Factor Receptor Family Are Specific to Distinct Cell Types in the Developing Chicken Embryo 107

ANN E. COWAN AND DIANA G. MYLES. Biogenesis of Surface Domains during Spermiogenesis in the Guinea Pig 124

B. H. A. SOKOLOWSKI, L. M. STAHL, AND P. A. FUCHS. Morphological and Physiological Development of Vestibular Hair Cells in the Organ-Cultured Otocyst of the Chick .. 134

CAROL I. MILES AND RONALD BOOKER. *Octopod*, a Homeotic Mutation of the Moth *Manduca sexta*, Affects Development of Both Mesodermal and Ectodermal Structures ... 147

GARY M. WESSEL AND SIMING W. CHEN. Transient, Localized Accumulation of α-Spectrin during Sea Urchin Morphogenesis 161

ARIANE BERDAL, DOMINIQUE HOTTON, JOHN WESLEY PIKE, HENRI MATHIEU, AND JEAN-MARIE DUPRET. Cell- and Stage-Specific Expression of Vitamin D Receptor and Calbindin Genes in Rat Incisor: Regulation by 1,25-Dihydroxyvitamin D_3 172

MOTOMI I. ENOMOTO, DAVID BOETTIGER, AND A. SUE MENKO. α5 Integrin Is a Critical Component of Adhesion Plaques in Myogenesis 180

MASAHIRO FUJISHIMA, MASAYUKI TSUDA, YOSHITAKA MIKAMI, AND KAZUTOSHI SHINODA. Costimulation-Induced Rounding in *Tetrahymena thermophila:* Early Cell Shape Transformation Induced by Sexual Cell-to-Cell Collisions between Complementary Mating Types 198

YI-AN SUN AND ROBERT J. WYMAN. Reevaluation of Electrophoresis in the *Drosophila* Egg Chamber 206

PAUL D. KINGSLEY, LYNNE M. ANGERER, AND ROBERT C. ANGERER. Major Temporal and Spatial Patterns of Gene Expression during Differentiation of the Sea Urchin Embryo 216

VICTORIA A. JURSNICH AND KENNETH C. BURTIS. A Positive Role in Differentiation for the Male doublesex Protein of *Drosophila* 235

SUSAN J. LOLLE AND ALICE Y. CHEUNG. Promiscuous Germination and Growth of Wildtype Pollen from *Arabidopsis* and Related Species on the Shoot of the *Arabidopsis* Mutant, *fiddlehead* 250

HUI-CHENG TIAN AND MICHAEL MARCOTRIGIANO. Origin and Development of Adventitious Shoot Meristems Initiated on Plant Chimeras 259
ANTON W. NEFF, HIROKI YOKOTA, HAE-MOON CHUNG, MASAMI WAKAHARA, AND GEORGE M. MALACINSKI. Early Amphibian (Anuran) Morphogenesis Is Sensitive to Novel Gravitational Fields 270
PETER G. NOAKES, WILLIAM D. PHILLIPS, THERESA A. HANLEY, JOSHUA R. SANES, AND JOHN P. MERLIE. 43K Protein and Acetylcholine Receptors Colocalize during the Initial Stages of Neuromuscular Synapse Formation *in Vivo* 275
PHILIP R. BRAUER AND JOHN A. YEE. Cranial Neural Crest Cells Synthesize and Secrete a Latent Form of Transforming Growth Factor β That Can Be Activated by Neural Crest Cell Proteolysis 281
Feature f-1

NUMBER 2, FEBRUARY 1993

Full Papers
HIROSHI SHIMIZU, YASUJI SAWADA, AND TSUTOMU SUGIYAMA. Minimum Tissue Size Required for Hydra Regeneration 287
ERIC T. ROSENTHAL, MICHELE BAHR, AND FRED H. WILT. Regulation of Maternal Messenger RNA Translation during Oogenesis and Embryogenesis in *Urechis caupo* 297
ROU-PAN HUANG, MASAYUKI OZAWA, KENJI KADOMATSU, AND TAKASHI MURAMATSU. Embigin, a Member of the Immunoglobulin Superfamily Expressed in Embryonic Cells, Enhances Cell-Substratum Adhesion 307
CORNELIUS A. WATSON, IVO SAUMAN, AND SPENCER J. BERRY. Actin Is a Major Structural and Functional Element of the Egg Cortex of Giant Silkmoths during Oogenesis 315
CHARLES B. UNDERHILL, HUONG A. NGUYEN, MEHRAN SHIZARI, AND MARTINE CULTY. CD44 Positive Macrophages Take up Hyaluronan during Lung Development 324
SUSAN C. BARNETT, ANNE-MARIE HUTCHINS, AND MARK NOBLE. Purification of Olfactory Nerve Ensheathing Cells from the Olfactory Bulb 337
STEVEN BALOGH, CHRISTIAN C. G. NAUS, AND PETER A. MERRIFIELD. Expression of Gap Junctions in Cultured Rat L6 Cells during Myogenesis 351
TANYA WHITFIELD, JANET HEASMAN, AND CHRISTOPHER WYLIE. XLPOU-60, a *Xenopus* POU-Domain mRNA, Is Oocyte-Specific from Very Early Stages of Oogenesis, and Localised to Presumptive Mesoderm and Ectoderm in the Blastula 361
VAUGHAN H. LEE AND BONNIE S. DUNBAR. Developmental Expression of the Rabbit 55-kDa Zona Pellucida Protein and Messenger RNA in Ovarian Follicles 371
HONG FEI AND GEOFFREY CHILDS. Temporal Embryonic Expression of the Sea Urchin Early H1 Gene Is Controlled by Sequences Immediately Upstream and Downstream of the TATA Element 383
JENNIFER S. ROBERTS, NANCY A. O'ROURKE, AND SUSAN K. MCCONNELL. Cell Migration in Cultured Cerebral Cortical Slices 396
TOSHIAKI NOCE, YUKO FUJIWARA, MICHIHIKO ITO, TAKASHI TAKEUCHI, NAOKO HASHIMOTO, MISAE YAMANOUCHI, TORU HIGASHINAKAGAWA, AND HIROKAZU FUJIMOTO. A Novel Murine Zinc Finger Gene Mapped within the t^{w18} Deletion Region Expresses in Germ Cells and Embryonic Nervous System 409
KEVIN PETERS, DAVID ORNITZ, SABINE WERNER, AND LEWIS WILLIAMS. Unique Expression Pattern of the FGF Receptor 3 Gene during Mouse Organogenesis 423
SUSAN M. DUTRO, JUDITH A. AIREY, CLAUDIA F. BECK, JOHN L. SUTKO, AND WILLIAM R. TRUMBLE. Ryanodine Receptor Expression in Embryonic Avian Cardiac Muscle ... 431
PAUL G. MCGUIRE AND S. M. ALEXANDER. Urokinase Production by Embryonic Endocardial-Derived Cells: Regulation by Substrate Composition 442
YAN LU, LAURA A. COX, DAMON C. HERBERT, FRANK J. WEAKER, CHRISTI A. WALTER, AND GWEN S. ADRIAN. Expression of Chimeric Human Transferrin-Chloramphenicol Acetyltransferase Genes in Liver and Brain of Transgenic Mice during Development 452
P. ANN ECCLESTON, KEIKO FUNA, AND CARL-HENRIK HELDIN. Expression of Platelet-Derived Growth Factor (PDGF) and PDGF α- and β-Receptors in the Peripheral Nervous System: An Analysis of Sciatic Nerve and Dorsal Root Ganglia 459

S. A. TOBET, J. E. CRANDALL, AND G. A. SCHWARTING. Relationship of Migrating Luteinizing Hormone-Releasing Hormone Neurons to Unique Olfactory System Glycoconjugates in Embryonic Rats 471
VOLKER SCHMID, CHRISTINE BAADER, ALESSANDRA BUCCIARELLI, AND SUSANNE REBER-MÜLLER. Mechanochemical Interactions between Striated Muscle Cells of Jellyfish and Grafted Extracellular Matrix Can Induce and Inhibit DNA Replication and Transdifferentiation *in Vitro* 483
WILLIAM H. LUDLAM AND JOHN A. KESSLER. Leukemia Inhibitory Factor and Ciliary Neurotrophic Factor Regulate Expression of Muscarinic Receptors in Cultured Sympathetic Neurons 497
NIRUPA CHAUDHARI AND KURT G. BEAM. mRNA for Cardiac Calcium Channel Is Expressed during Development of Skeletal Muscle 507
JEANETTE E. NATZLE. Temporal Regulation of *Drosophila* Imaginal Disc Morphogenesis: A Hierarchy of Primary and Secondary 20-Hydroxyecdysone-Responsive Loci .. 516
C. A. BATES, N. TRINH, AND R. L. MEYER. Distribution of Microtubule-Associated Proteins (MAPs) in Adult and Embryonic Mouse Retinal Explants: Presence of the Embryonic Map, MAP5/1B, in Regenerating Adult Retinal Axons 533
TING-XIN JIANG, JIAN-RU YI, SHAO-YAO YING, AND CHENG-MING CHUONG. Activin Enhances Chondrogenesis of Limb Bud Cells: Stimulation of Precartilaginous Mesenchymal Condensations and Expression of NCAM 545
YONGGU LIN, MARTHA T. HAMBLIN, MARTEN J. EDWARDS, CAROLINA BARILLAS-MURY, MICHAEL R. KANOST, DOUGLAS C. KNIPPLE, MARIANA F. WOLFNER, AND HENRY H. HAGEDORN. Structure, Expression, and Hormonal Control of Genes from the Mosquito, *Aedes aegypti*, Which Encode Proteins Similar to the Vitelline Membrane Proteins of *Drosophila melanogaster* 558
Author Index for Volume 155 569

NOTICE

The Subject Index for Volume 155 will appear in the June 1993 issue as part of a cumulative index for Volumes 155 through 157.

Developmental Biology

Information for Authors

Developmental Biology will publish papers containing new and significant information bearing on developmental mechanisms of general interest. Analysis of development, growth, regeneration, and tissue repair in plants and animals at the molecular, cellular, and genetic levels are topics suitable for the journal. Descriptive work, at either the anatomical or molecular level, will not be published unless it leads to fundamentally new conclusions.

Articles usually do not exceed 15,000 words and must be preceded by an abstract of about 200 words that should be fully intelligible by itself. Brief notes are 1500 words or less, including the bibliography, and should have an abstract of less than 100 words and a limit of one page of figures. All papers will be published in English.

Review and memorial articles usually are solicited; however, the Editor-in-Chief invites inquiries and suggestions. Review articles are subject to the same review process as regular articles, but receive priority publication.

Manuscripts should be as concise as possible; full documentation of results should be combined with maximum brevity and clarity. Quantitative data should be presented so that the reader can readily judge statistical significance of differences. The discussion section should relate the present work to previous knowledge but should not be expanded into a review of the field. The standard order of sections is: abstract, introduction, materials and methods, results, and discussion. Combined results and discussion may be used. Acknowledgments, references, footnotes, tables, and figure legends should follow the discussion in that order. Number all manuscript pages consecutively and type double-spaced throughout. Provide a running title of 35 or fewer letters and spaces. Use footnotes sparingly; cite them with superscript numbers; type them on a separate sheet. Do not italicize for emphasis.

Abbreviations and units should be used consistently. Consult the lists published in the *Proceedings of the National Academy of Sciences (USA)*, the *Journal of Biological Chemistry*, and *Biochemistry* for standard abbreviations which need not be defined. Collect all abbreviations into a footnote and refer to it at the first use of an abbreviation. The use of units should follow the Système International. Use prefixes, e.g., μM, not 10^{-6} M. Note that M stands for molar, not mole. Use hr, min, sec, rpm, and cpm without definition, without a period, and without an "s" in the plural (i.e., 20 min).

Figures should be numbered consecutively in the order of their appearance and each should have a descriptive legend. Mark all figures with the orientation and with the authors' names. All figure sizes mentioned below are the "*preferred*" sizes. *Line drawings* will be reduced in accordance with the complexity of the figures. Good quality prints are acceptable. The maximum size submitted should be 215 × 280 mm. *Photographs* should be submitted as actual size for reproduction, fitting column (90 mm) or page (185 mm) width. Sets of micrographs mounted on 10- to 12-point *flexible* illustration board and in combinations up to 203 × 267 mm in size are acceptable. For best reproduction, provide clear, glossy prints with adequate contrast. The magnification should be indicated by a bar on the photograph. Figures that are to appear together as one plate should have comparable contrast and density and should be mounted on 10- to 12-point *flexible* illustration board or paper as close together as possible. Do not combine line drawings and halftones into composite plates; if you wish them to appear together, submit unmounted original art and a layout sheet. The printer will place thin white lines between the figures on each plate. Providing an overlay that indicates the most critical areas of the micrograph will aid in ensuring high-quality reproduction.

Color figures. Two color plates will be published *free* of charge in each article, provided color is deemed scientifically necessary by the reviewers and the Editorial Board. Additional color figures will be charged to the author. See the instructions above if mounting is necessary; color figures *must* be submitted on flexible board due to the nature of the reproduction process.

Suggestions for **cover photographs** are welcome. Submit them as slides *with* $8\frac{1}{2} \times 11$-inch color or black-and-white prints to accompany specific articles. A short (one-line) legend should accompany each photograph.

Tables should be typed on separate pages and numbered consecutively with Arabic numerals; each should have a concise heading.

References to the literature should be cited as: Doe (1987) has observed that . . . ; (Doe, 1988). Doe *et al.* (1988) should be used in the case of articles with more than two authors. Use suffixes a, b, etc., following the date to distinguish two or more works by the same authors in the same year (Doe, 1987a,b). Arrange literature citations in the bibliography according to the surname of the author, using the following styles:

> Colin, A. M. (1986). Rapid repetitive microinjection. *In* "Methods in Cell Biology" (T. E. Schroeder, Ed.), Vol. 27, pp. 395–406. Academic Press, San Diego, CA.

Holley, J. A., and Silver, J. (1987). Growth pattern of pioneering chick spinal cord axons. *Dev. Biol.* **123,** 375–388.

Abbreviate journal titles according to *Chemical Abstracts Service Source Index*, 1985. Do not refer to abstracts or papers which have not been accepted for publication.

Proofs and Reprints. Proofs will be sent to the authors with reprint order forms. Fifty reprints of each article are provided free of charge. Additional reprints may be ordered using the form provided.

To submit a manuscript, send three complete copies including illustrations to Peter J. Bryant, Editor-in-Chief, *Developmental Biology*, Developmental Biology Center, University of California, Irvine, California 92717-2280. Telephone (714) 856-4715; E-mail address: PJBRYANT@UCI; Fax: (714) 856-7399. In the cover letter to the Editor or on the manuscript title page, indicate the name, address, and telephone number of the author who should be contacted in editorial matters. Please do not suggest reviewers or associate editors.

Conditions of publication

Original papers only will be considered. Submission of a manuscript implies the authors' assurance that the same work has not been and will not be nor is presently submitted elsewhere, and that its submission for publication has been approved by all of the authors and by the institution where the work was carried out; further, that any person cited as a source of personal communications has approved such citation. Explicit proof of these implied assurances may be required at the Editor's discretion. Articles and any other material published in *Developmental Biology* represent the opinions of the author(s), and should not be construed to reflect the opinions of the Editor, the Publisher, or the Society for Developmental Biology.

Publication of a research article in *Developmental Biology* is taken to imply that the authors are prepared to distribute freely to interested academic researchers for their own use any clone (of cells or DNA or antibodies) used in the experiments reported. Manuscripts that report research involving human subjects must be supported by a copy of the document authorizing the proposed research, issued and signed by the appropriate official(s) of the institution where the work was conducted.

Authors submitting a manuscript do so on the understanding that if it is accepted for publication, copyright in the article, including the right to reproduce the article in all forms and media, shall be assigned exclusively to the Publisher. The Publisher will not refuse any reasonable request by the author for permission to reproduce any of his or her contributions to the journal.

All genetic sequence information published in *Developmental Biology* must also be deposited with GenBank. When you submit such a manuscript, please indicate your GenBank accession number. If the data have not yet been submitted, we will provide a GenBank submission form and will expect you to send us the accession number as soon as it becomes available. Published articles will include a footnote indicating the database to which data have been supplied and the accession number when this information has been supplied by the authors.

Personal computer disks

Manuscripts may be submitted to *Developmental Biology* on personal computer disks after the manuscript has been accepted and after all revisions have been incorporated onto the disk. Please supply the file as a straight ASCII file with generic codes specified by the publisher. Label the disk with the type of computer used, the type of software and the version number, and the disk format. All tabular and mathematical material will be typeset conventionally. Art must be prepared as camera-ready copy; see the section on Figures earlier in this Information for Authors.

A hard copy printout of the manuscript that exactly matches the disk file must be supplied. Academic Press will not accept disks without accompanying printouts of all files on the disk. File names must clearly indicate the content of each file. The manuscript will be edited according to the style of the journal, and the proofs must be read carefully by the author. Disks that are not translatable or economical to process will not be used. The publisher reserves the right not to use the disk.

For further information on preparing the disk for typesetting conversion and a list of generic codes, please contact the publisher (Editorial Supervisor, Journal Division, Academic Press, 1250 Sixth Avenue, San Diego, California 92101; telephone: (619) 699-6415; fax: (619) 699-6800).

For information about advertising in *Developmental Biology*, please contact Alison Ward, Advertising Coordinator, Academic Press, Inc., Journal Promotion Department, 1250 Sixth Avenue, San Diego, California 92101 (fax: (619) 699-6715).

ANALYTICAL BIOCHEMISTRY

Methods in the Biological Sciences

Editor-in-Chief
William B. Jakoby
National Institutes of Health, Bethesda, Maryland
Editorial Office: 1250 Sixth Avenue, San Diego, CA 92101

Analytical Biochemistry emphasizes methods and methodology in the biological and biochemical sciences and all related fields. The journal publishes the results of original research as well as reviews of methods.

Publishing Methods in:

- Analytical techniques
- Membranes and membrane proteins
- Molecular genetics: cloning, sequencing, and mutagenesis
- Novel methods of protein purification
- Immunological techniques of applicability in biochemistry
- Immunoassays that introduce a unique approach
- Cell biology, general cell and organ culture
- Pharmacological and toxicological research techniques

Analytical Biochemistry includes two additional major sections:

- Reviews –publishing review articles that cover subject matter
- Notes and Tips–a new section featuring methods that can be summarized in a shorter format allowing more rapid publication, including helpful "kitchen tricks"

Volumes 208–215 (1993), 16 issues
ISSN 0003-2697
In the U.S.A. and Canada: $1208.00
All other countries: $1434.00

Sample copies and privileged personal rates are available upon request. For more information, please write or call:

Academic Press, Inc.
Journal Promotion Department
1250 Sixth Avenue
San Diego, CA 92101
U.S.A.
(619)699-6742

All prices are in U.S. dollars and are subject to change without notice.
Candian customers: Please add 7% Goods and Services Tax to your order.

S3078

Archives of Biochemistry AND Biophysics

Archives of Biochemistry and Biophysics presents articles in the developing areas of biochemistry and biophysics, especially those related to molecular biology, cell biology, and developmental biology. The journal strives for the rapid publication of articles of high quality and significance in an international forum.

Research Areas Include

- Molecular biology and biochemistry of cell–surface and membrane proteins
- Proteases, protein turnover, and post-translational processing
- Enzyme structure, function, and regulation
- Plant molecular biology and biochemistry
- Protein structure and functions
- Glycobiology: Proteoglycans, extracellular matrices, glycoconjugates, and oligosaccharides
- Cytokines and cytokine receptors; hematopoietic transformation
- Transcriptional control; oncogenes and signal transduction; protein–DNA interaction
- Biological oxidations, free radical reactions, and oxygen toxicity
- Biophysical chemistry; spectroscopy of proteins and nucleic acids
- X-ray crystallography and high-resolution structure analysis
- Receptors, membrane transport, and intracellular signals
- Biological oxidations, oxidants, and antioxidants
- Lipids and lipid mediators; glycolipids
- Cellular regulation; phosphorylation and dephosphorylation
- Molecular biology of oxygenases and P450 reactions

Volumes 300–307 (1993), 16 issues
ISSN 0003-9861

In the U.S.A. and Canada: $1224.00
All other countries: $1447.00

Sample copies and privileged personal rates are available on request. For more information, please write or call:

ACADEMIC PRESS, INC.
Journal Promotion Department
1250 Sixth Avenue, San Diego, CA 92101, U.S.A. (619) 699-6742

Chairman of the Editorial Committee

J. T. August
The Johns Hopkins University
Baltimore, Maryland

Editorial Committee

R. H. Abeles
J. S. Bond
R. F. Colman
R. Croteau
A. Ginsburg
V. C. Hascall
J. N. Ihle
M. Karin
A. Kobata
L. Packer
G. H. Reed
D. Ringe
A. Scarpa
H. Sies
F. L. Snyder
E. R. Stadtman
M. R. Waterman

All prices are in U.S. dollars and are subject to change without notice. Canadian customers: Please add 7% Goods and Services Tax to your order.

S3081

SOCIETY FOR DEVELOPMENTAL BIOLOGY, INC.

BOX 40741
WASHINGTON, D.C. 20016

NOMINATION FOR MEMBERSHIP

Excerpt from the Bylaws and the Code of the Society: "Election of a person to full or student membership shall be by the Board of Trustees upon nomination by one sponsor who is a full member of the Society." "A doctoral degree or its equivalent and an interest in development and growth in biological systems shall be prerequisites for full membership." "Students enrolled in a graduate program leading to an advanced degree in Developmental Biology or related fields shall be eligible for student membership."

Membership Category: _____Full _____Student

Name of Candidate: _____

Degrees, Granting Institutions and Dates:

_____

_____

_____

Present Position: _____

Current Mailing Address (no name) (three lines of 30 characters each for address label)

_____

_____

_____

Telephone Number (area code, number and extension, if any) _____

Signature of one sponsor who is a full member of the Society:

Name _____ Signature _____

Address _____

Additional Instructions:

1. Please do not submit dues with this application.
2. Return the completed application to:

   Society for Developmental Biology, Inc.
   Box 40741
   Washington, D.C. 20016

3. Please use the back of this form to describe your major professional interests.

For information about subscriptions to DEVELOPMENTAL BIOLOGY, please contact the publisher: Academic Press, Inc., Journal Division, 1250 Sixth Avenue, San Diego, California 92101 Telephone: (619) 699-6584.